(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

[Continued on next page]

(54) Title: DESCRIPTIVE SEARCH METHOD AND APPARATUS FOR USE IN ELECTRONIC COMMERCE

(57) Abstract: A method and apparatus are provided to search for products and service for sale in electronic commerce. In a shopping interface for electronic commerce, a descriptive graphical user interface (GUI) search component establishes a communication session between a client computer system having a display device and an electronic commerce server computer over a network; generates a view on the display device having an area to search for products and services for purchase; displays a field listing products available for purchase; receives a selection from one of the listed products; displays a field listing actions associated with the selected product; receives a selection from one of the listed actions; displays a filed listing subjects associated with the selected product and the selected action; selects a subject from one of the listed subjects; searches a database associated with the electronic commerce server for products and services matching the selected product, action, and subject combination, and displays the matching products and services for purchase.

DESCRIPTIVE SEARCH METHOD AND APPARATUS
FOR USE IN ELECTRONIC COMMERCE

Technical Field

This invention generally relates to electronic commerce over a network and more

5   particularly, to descriptive search method and apparatus for use in electronic commerce.

Description of the Related Art

An increasing number of businesses have developed websites on the Internet to sell their products and services. These websites allow businesses to sell many of the same products and services found in a traditional "brick and mortar" store without the overhead

10   of leasing or purchasing real estate. In fact, by eliminating this overhead many website-based businesses are able to offer more products and services than the traditional stores. For example, the traditional software company needs large retail stores to display software products and computer systems to demonstrate software applications. In contrast, a website-based software retailer can describe a software package on a web page

15   and demonstrate the product using several web pages or simulations. The website business may also allow the user to download the software over an Internet connection using electronic software download (ESD) methods and then purchase the software using a credit card.

The particular website design used in these businesses can greatly influence the

20   volume of products and services sold by the business. Specifically, the website must allow a shopper to easily browse the website and selectively purchase products and services. Money used to purchase the items must be transferred securely over the Internet to make the purchaser comfortable doing business with the website based business.

Many websites use a "shopping cart" paradigm to facilitate purchasing products and

25   services over the Internet. The shopping cart allows a web-based shopper to identify items on a website they want to purchase as they browse through web pages on the site. Once the shopper has completed shopping, all the items in the shopping cart are checked out and the shopper pays for the items using an appropriate form of payment.

Even with a shopping cart, users may have difficult finding the products and services

30   they want to purchase. Unfortunately, conventional shopping carts do not take into account that the user cannot physically see the vast number of products and services

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available on the web-site. For example, the typical search interface provided by these conventional shopping carts assumes the user knows a keyword or title of the product they want to purchase. As a result, the user may only search for products or services they are already familiar with or have previously purchased. Further, this makes marketing new products or services difficult on conventional web-sites unless the user has hours to spend sifting through the numerous items for sale. Meanwhile, the user spends more time browsing on the web-site and less time purchasing products and services.

Accordingly, there is a need to improve the method and apparatus used to search for and locate products sold on web-sites over a network such as the Internet.

Summary of The Invention

In accordance with the present invention, as embodied and broadly described herein, a method and apparatus are provided to search for products and service for sale in electronic commerce. In a shopping interface electronic commerce, a descriptive graphical user interface (GUI) search component establishes a communication session between a client computer system having a display device and an electronic commerce server computer over a network; generates a view on the display device having an area to search for products and services for purchase; displays a field listing products available for purchase; receives a selection from one of the listed products; displays a field listing actions associated with the selected product; receives a selection from one of the listed actions; displays a field listing subjects associated with the selected product and the selected action; selects a subject from one of the listed subjects; searches a database associated with the electronic commerce server for products and services matching the selected product, action, and subject combination, and displays the matching products and services for purchase.

Brief Description of the Drawings

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate systems and methods consistent with the invention and, together with the description, serve to explain the advantages, and principles of the invention.

In the drawings:

FIG. 1 is a block diagram depicting an exemplary electronic commerce network:

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FIG. 2 is a block diagram depicting the components used in a electronic commerce server designed in accordance with one implementation of the present invention:

FIG. 3 is a block diagram depicting a shopping cart interface designed in accordance with one implementation of the present invention: and

5   FIG. 4 is a block diagram depicting a descriptive graphical user interface search component in accordance with the present invention: and

FIG. 5 is a flowchart diagram depicting the steps for operating a descriptive graphical user interface search component in accordance with the present invention.

Detailed Description

10   ## Overview

Systems and methods consistent with the present invention use a descriptive search method and apparatus to search for products and services for sale on a web-site. In one implementation, a shopping interface presents a descriptive graphical user interface component having a several descriptive categories for the user to select. These categories

15   are customized to include the products and services for sale at a specific web-site. Each category helps narrow the users search to a specific product or service sold on the web-site. For example, the descriptive categories used by the search method can include a product type, an action taken by the product, and a subject matter related to the action and product type. Users can locate products more efficiently by describing the categories

20   associated with a product or service rather than searching for the product or service with keywords.

Electronic Commerce System

FIG. 1 is a block diagram depicting an electronic commerce system 100 using a shopping cart interface with a descriptive GUI search component designed in accordance

25   with the present invention. Electronic commerce system 100 includes a client system 102, a client system 104, a network 106 such as the Internet. an electronic commerce server 108, an order fulfillment center 118, and a product warehouse 120. These components associated with electronic commerce system 100 provide the essential infrastructure necessary for users to purchase products and services over a network.

30   Alternate implementations may include different components depending on the particular implementation and corresponding system requirements.

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Users shopping for products or services use client system 102 and client system 104 to access electronic commerce server 108. These client systems can be personal computers, handheld devices, or subsystems in larger devices like an automobile or household appliance. A shopping interface designed in accordance with the present

5   invention executing on these various devices facilitates the browsing, selecting, and purchasing of products and services over a network.

For example, client system 102 can be a personal computer whereby a person shops for software over a network and downloads the software onto the computer. Alternatively, client system 102 can be computer device embedded in a household

10   appliance or industrial device having a shopping interface designed consistent with the present invention. For example, sensors connected to an embedded computer system in a refrigerator can inventory food and display the inventory results on a display device. With this information, a person can use the GUI interface generated by the shopping interface to order food over the Internet and replenish food missing from the refrigerator.

15   Similar applications using a shopping interface consistent with present invention can be applied to ordering parts, supplies, or other items over a network.

Each client system connects to electronic commerce server 108 through network 106. Network 106 supports secure data communication suitable for sending and receiving payment information and other confidential matters. Electronic commerce

20   server 108 can use Microsoft's Commerce Server and Internet Information Server (IIS) software to facilitate the processing of transactions, credit cards and other forms of payment. Using these software packages, network 106 can securely transmit and receive information with a secured socket layer (SSL) implemented on a TCP/IP based network. Further, network 106 can be a wireless network or a traditional terrestrial-based network

25   based on copper or fiber-optic physical media.

Electronic commerce server 108 houses software and hardware components used to facilitate the purchase of products and services over network 106. Software and hardware in electronic commerce server 108 work with a shopping interface designed in accordance with the present invention. Depending on the application, electronic

30   commerce server 108 may access a variety of databases for information including a product database 112, a web page storage 114, and a transaction database 116.

Product database 112 includes inventory information such as quantity, price, and availability of the products and services for sale. Product information can be generated by the party manufacturing the products. For example, a request for a product out of stock in product database 112 can automatically trigger a request for additional products

5 directly from manufacturing facilities. The manufacturer can immediately respond with the time frame the requested product will be available for purchase. Alternatively, the manufacturer may also suggest an alternate product they have in stock for immediate delivery.

Web page storage 114 provides a storage area for the web pages used by a

10 shopping cart interface designed in accordance with the present invention. The storage area used to store these web pages can be a database or a hierarchical file system. Typically, the web pages stored in web page storage 114 are developed using a combination of HTML, Javascript, Java, perl, and other languages compatible with electronic commerce server 108. Electronic commerce server 108 has the ability to

15 execute procedures and functions written in these languages to generate information used for displaying web pages.

Transaction database 116 records information on transactions including customer information, past purchases, and related accounting information. Shopping interface 220 can store shipping information in transaction database 116 and retrieve the information

20 for a subsequent purchase. Also, transaction database 116 can be used to provide status on recent purchases and availability of products.

Order fulfillment center 118 interacts with electronic commerce server 108 to facilitate the delivery of products and services from product warehouse 120. For example, order fulfillment center 118 can be a computer system configured to compress,

25 encrypt, and deliver software through an ESD mechanism to users over network 106. Product warehouse 120 can be a computer system capable of delivering software keys to order fulfillment center 118 that decrypt or enable operation of software. Alternatively, order fulfillment center 118 can be configured to manage the delivery of tangible products such as clothes, books, and food. Accordingly, product warehouse 120 would

30 deliver these products to order fulfillment center 118 for packaging and delivery directly to the users making orders over network 106.

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Electronic commerce system 100 can be implemented to work with multiple product warehouses having many different products and services and not a single product warehouse 120 as illustrated in FIG. 1. Further, a party selling products in product warehouse 120 may outsource managing the sale of such products over network 106 to another company that implements electronic commerce system 100. That is, electronic commerce system 100 and a shopping interface consistent with the present invention can operate as a business separate from the businesses engaged in manufacturing, designing or supplying products and services to product warehouse 120.

FIG. 2 is a block diagram depicting the components used in a electronic commerce server designed in accordance with one implementation of the present invention. Specifically, electronic commerce server 108 includes a processor 202, an input-output interface 204, a display device 206, a network connection 208, memory 210, and a secondary storage 212, coupled together over an internal bus 217.

Processor 202 is a general purpose processor such as an Intel Pentium processor or an application specific integrated circuit (ASIC) designed to execute an application designed in accordance with the present invention. Input-output interface 204 is connected to a number of different peripheral devices such as a keyboard, a mouse, an external storage device, or a printer. Display device 206 is computer terminal that provides status information on electronic commerce server 108.

Network connection 208 facilitates connectivity between electronic commerce server 108 and client systems over network 106. For example, network connection 208 can transmit packetized voice and data using Ethernet and TCP/IP protocols over a high-speed optical or copper physical layer. As required, device drivers and related software used with network connection 208 are compatible with SSL and other methods of secure communication.

Memory 210 includes a run-time environment 214, a database server 216, a web server 218, and a shopping interface 220 consistent with the present invention. Run-time environment 214 facilitates execution of software processes located in memory 210 on processor 202 as discussed below. Different run-time environments 214 compatible with implementations of the present invention include real-time operating systems (RTOS) for real-time processing, UNIX-based operating systems, or Microsoft Windows. Run-time

environment 214 also includes drivers and other routines necessary for operating processor 202. input-output interface 204. display device 206. and network connection 208.

Database server 216 executes on electronic commerce server 108 and provides access to databases having information used by shopping interface 220. Specifically. database server 216 may access local information stored in a database on secondary storage 212 or may access information stored remotely over a network on another computer system. Generally, applications such as shopping interface 220 will access database information through database server 216 using an application programming interface (API). For example. shopping interface 220 can access databases such as transaction database 116 using commands compatible with a structured query language (SQL) API.

Web server 218 executes on electronic commerce server 108 and services requests for web pages received from client systems 102 and 104. In operation, web server 218 processes web page requests and corresponding parameters such as those contained in uniform resource locators (URL). and retrieves the appropriate web pages from web page storage 114. Parameters are used to access the database with information on the product or service being purchased. Web server 218 transmits this product and service information from the database along with the requested web page back to one of the client systems where it is displayed by shopping interface 220 on a display device. For example, a user may request the price of a particular product being sold through electronic commerce server 108. Web server 218 will extract pricing information from product database 112 and combine the pricing information for use in the web page sent back to a particular client system.

Shopping interface 220 provides information stored in various databases to users shopping over a network. In one implementation of the present invention. these databases include product database 112, transaction database 114, and web page storage 116. Alternate implementation of the invention may include additional databases or fewer databases as required by the particular implementation.

Descriptive GUI search component can be integrated into shopping interface 220. Shopping interface 220 is one exemplary interface that uses a descriptive GUI

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search component in addition to improved purchase options and purchase tracking features. Shopping interface 220 facilitates the browsing. selection. and purchase of products and services over a network. In particular. shopping interface 220 allows a user to easily search a large database of products and/or services and purchase them over a

5   network. The design of shopping interface 220 enables a person shopping for these products and services to track all costs for purchasing the various items including shipping. handling, tax. and purchase price. Shopping interface 220 consistent with the invention can be developed using a combination of object-oriented programming languages such as Java, hypertext markup language (HTML). shell scripts appropriate to

10   the particular operating system (e.g., shell scripts may include bsh, csh. ksh, and perl), and other languages such as Javascript. In addition, database programming languages such as SQL can also be used to access data stored in various databases.

Exemplary Shopping Interface

FIG. 3 is a block diagram depicting the view generated by shopping interface 220

15   designed consistent with the present invention. Shopping interface 220 includes a graphical user interface (GUI) portion that displays GUI components on the display screen and an engine portion that accesses databases containing information associated the available products and services. Specifically, shopping interface 220 generates GUI components in several distinct areas of the display screen to provide information on the

20   products and services, and receive requests for purchasing the same. Shopping interface 220 presents the combined information in these distinct areas to the user simultaneously.

One area of the display includes a finder area 302. Shopping interface 220 generates GUI components in finder area 302 to collect parameters used by the engine portion of shopping interface 220 to search for specific products and services. The

25   complexity of the GUI components displayed in finder area 302 and corresponding searches depend on the number of products and services offered for sale. If the number of products and services are few, finder area 302 may only require a simple check list or pull-down menu listing the products available for sale. In contrast, a larger number of products can require more complex search tools.

30   Finder area 302 in FIG. 3 can be used to search through a large number of products and services. For example, finder area 302 in FIG. 3 includes a free-form search

GUI component 309 to search by keywords and a descriptive GUI search component 311 to search using descriptions. Free-form search GUI component 309 allows a person to enter keywords associated with some aspect of the product or service they area interested in purchasing. The keyword is a specific word unique to a particular product. Free-form

5   search GUI component 309 can be used to compare keywords with information the manufacturer has included in the title of the product or placed on the package of the product. This may include information such as the specific name of a product (e.g., "Crock pot"), the manufacturer of the product (e.g., "Revere"), and measurements associated with the product (e.g., 16 quarts). Consequently, free-form search GUI

10   component 309 works well when a person knows specific words associated with a product or service they are interested in purchasing.

In contrast, descriptive GUI search component 311 searches for products based on a product description. Descriptive GUI search component 311 searches for products and services based on categories of information and not specific keywords as required in

15   free-form search tool 309. In one implementation, descriptive search GUI component 311 includes a product type field 310, an action type field 312, and a subject type field 314. These fields can include a series of predetermined categories entered in pull-down menus or may be designed to receive categories entered by a user.

Within descriptive search GUI component 311, product type field 310 includes

20   a list of distinct product types offered on the website. The specific product types depends on the type of products being sold. For example, a website selling computers and related products may include categories such as software, hardware, books, and computer courses. The product type field 310 specifically helps a person shop for types of products without having to know specific keywords associated with the particular product.

25   Descriptive search GUI component 311 includes action type field 312 to allow the user to limit the type of information when browsing. The possible actions offered in action type field 312 depends on the product type field 310 selected above. This helps a person focus on specific items and narrow down the choices for products and services on the website. For example, if product type field 310 includes computer software then

30   action type field 312 may be the action indicating that they "execute on a Macintosh

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computer" or "execute on a Windows-based computer". Action type field 312 can identify products that are on-sale, newly released, or have any broad action.

Descriptive search GUI component 311 includes subject type field 314 to allow a user to describe a more specific characteristic of product type as limited by action type

5   field 312. Together product type field 310 and action type field 312 limit the specific characteristics available in subject type field 314. In some cases, subject type field 314 may describe the purpose of a product. For example, subject type field 314 can include categories for cooking food, repairing automobiles, or building homes. Product type 310 would determine whether the user would see software, books, or videos on these topics

10   while action type 312 would determine if these products are for helping a person learn about these subjects, teach these subjects, develop a career in these subjects, or take other actions in these areas.

The combination of product type field 310, action type field 312, and subject type field 314 are combined to form a complete query. A descriptive search could search for

15   "Software" (i.e., a product type) "that helps me" (i.e., an action type) "plan meals" (i.e., a subject type). If the number of selections available in subject type field 314 are too numerous, the subject type field 314 can be text-entry box the user enters attributes of the product. Alternatively, if the number of subjects are fewer in number then a pull-down menu can be used to provide the choices.

20   Results from the search based on information in finder area 302 generates products units for display in viewer area 304. A product unit GUI component is a visual symbolic representation of a product or service. Initially, the product units matching the search are displayed in the upper portion of viewer area 304 along with a brief description. For example, in FIG. 3 viewer area 304 includes a product unit GUI

25   component 316 for product E having basic description 322 and a product unit GUI component 318 for product F having basic description 324. The items displayed in the upper portion of viewer area 304 can be scrolled using a scroller as illustrated.

Shopping interface 220 provides a more detailed description when a user selects a product unit in this upper region of viewer area 304. For example, shopping interface

30   220 displays detailed information 326 on product E when product unit GUI component 316 is selected. Detailed information 326 can include information describing the price,

current availability of the product or service, and terms and conditions associated with purchasing the product or service using one of the multiple purchase levels discussed below.

Specifically, a user can indicate an interest in purchasing a product or service by
5   selecting one of the multiple purchase levels displayed in the product unit. For example, product unit GUI components displayed in viewer area 304 allow the user to select either the "Now" or "Later" buttons to purchase the product. The "Now" button indicates that the person would like to purchase the product immediately while the "Later" button means the person is interested in purchasing the product but not immediately. Selecting
10 either button, however, places the product unit in keeper area 306 and indicates that the user shopping is interested in purchasing the product or service.

Keeper area 306 allows users to see items they are interested in purchasing in a product display area 328 and the related aggregate costs associated with purchasing the products or services in a totals area 330. The user has the ability to include products
15 selected for immediate purchase in the aggregate costs as well as products selected for purchase at a later time.

Product display area 328 holds a product unit for each product or service selected until it is purchased. Each product unit remains in product display area 328 until a user actually purchases item or removes the item from product display 328. This feature
20 permits the user to view the selections during every visit to the website. The items within product display area 328 can be scrolled using a scroll bar as illustrated.

For example, if a user selects the "Now" button on product unit 329 and selects the "Check Out" button in totals area 330, then the shopper purchases "Product C" and product unit 329 is removed from product display area 328. However, if a user selects
25 the "Later" button on product unit 329, the user does not intend to purchase the product unit a later date and product unit 329 is not removed from product display area 328 even when the "Check Out" button is selected.

Totals area 330 keeps track of the aggregate costs associated with selected products in product display area 328. Specifically, the total value in totals area 330
30 reflects the purchase price, shipping costs, and taxes associated with product units in product display area 328 having the "Now" button selected. Products units having the

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"Later" button selected are not included in the total value in totals area 330. These
particular product units are excluded from the calculation because they are not going to
be purchased immediately. In an alternative implementation, a user may also include
products designated for purchase "Later" in the aggregate costs provided in totals area
5   330.

In operation, totals area 330 is not scrolled like product display area 328 within
keeper area 306. This ensures that the aggregate costs associated with purchasing the
products or services is always present and available to the person shopping on the
website. Alternate implementations may allow the totals area 330 to scroll if the user
10   wants scrolling or if the entries in totals area 330 requires scrolling to view the various
costs.

Descriptive Search Component

FIG. 4 is a block diagram depicting a descriptive GUI search component 400 in
accordance with the present invention. Categories used by descriptive GUI search
15   component 400 includes product type 310, action type 312, and subject type 314. Each
product or service for sale on a website is associated with a combination of these
categories for rapid identification. For example, a person familiar with the products and
services being offered for sale creates the proper categories and categorizes the products
to best target the audience purchasing the products and services. This allows the user to
20   locate items on a website quickly and efficiently. In addition to these specific categories,
other categories are contemplated tailored to the products or services being offered on the
particular website.

FIG. 5 is a flowchart diagram depicting the steps for operating a descriptive
graphical user interface search component in accordance with the present invention. In
25   operation, shopping interface 220 displays a search area having the descriptive GUI
search component consistent with the present invention (step 502). This may require
establishing a communication session between a client computer system displaying
shopping interface 220 and electronic commerce server 108 where the categories for
performing the search are kept. Descriptive GUI search component then presents a list
30   of product types available for purchase using shopping interface 220 (step 504). For
example, these could include a general list of products being sold by a website such as

software, books, videos, compact discs, or tapes. Presented with these options, the user then selects one product type they are most interested in purchasing (step 506). Selecting a product type focuses the subsequent portions of the search only to these types of products on the website. Accordingly, descriptive GUI search component then lists a

5   subset of available actions according to the selected product type (step 508). This actions correspond to the categories of actions the selected product types are capable of performing. For example, these actions can include learning, developing a business, teachings, or repairing.

The user selects an action from this list based on their interest (step 510) and the

10   descriptive GUI search component then list of subjects corresponding to the selected action and selected product (step 512). These subjects are the narrowest search category provided to the user as they are limited according to the specific product and action they have selected. Subjects presented to the user may include car repair, cooking, programming computers, playing guitar. Once the user selects a subject from the list of

15   subjects (step 514), a query is formed from the product type, action type, and subject type and submitted to a database for searching (step 516). Accordingly, the user receives a list of products or services matching the specific product type, action type, and subject type offered for sale on the website (step 518).

While specific embodiments have been described herein for purposes of

20   illustration, various modifications may be made without departing from the spirit and scope of the invention. Further, although aspects of the present invention are described as being stored in memory and other storage mediums, one skilled in the art will appreciate that these aspects of the present invention can also be stored on or read from other types of computer-readable media, such as secondary storage devices, like hard

25   disks, floppy disks, or CD-ROM; a carrier wave from the Internet, or other forms of RAM. Accordingly, the invention is not limited to the above described embodiments, but instead is defined by the appended claims in light of their full scope of equivalents.

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Claims

1. A method, performed on a processor, of searching for products and service for sale in electronic commerce, comprising:

    establishing a communication session between a client computer system having

5   a display device and an electronic commerce server computer over a network;

    generating a view on the display device having an area to search for products and services for purchase;

    displaying a field listing products available for purchase;

    receiving a selection from one of the listed products;

10   displaying a field listing actions associated with the selected product;

    receiving a selection from one of the listed actions;

    displaying a field listing subjects associated with the selected product and the selected action;

    selecting a subject from one of the listed subjects;

15   searching a database associated with the electronic commerce server for products and services matching the selected product, action, and subject combination; and

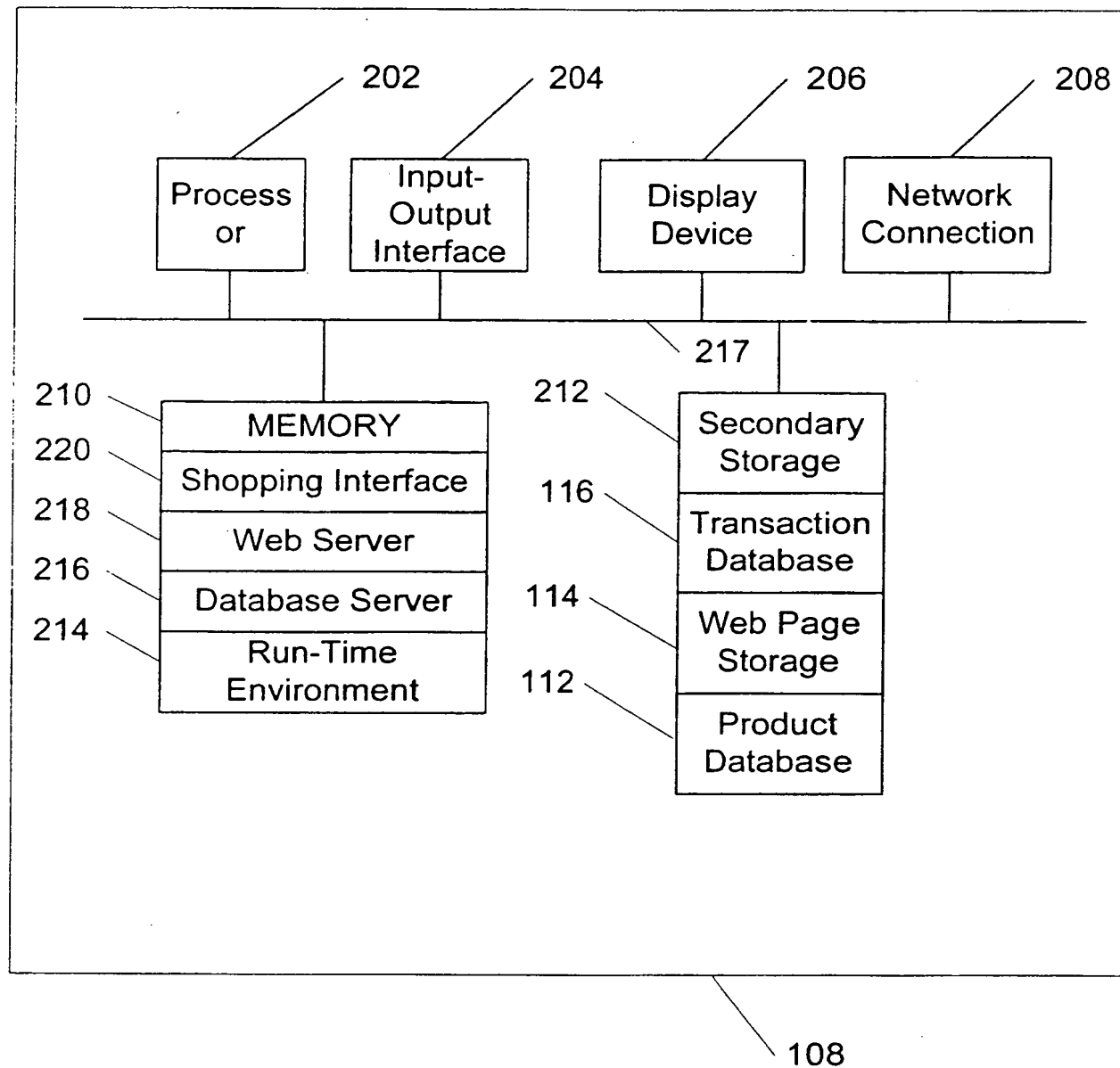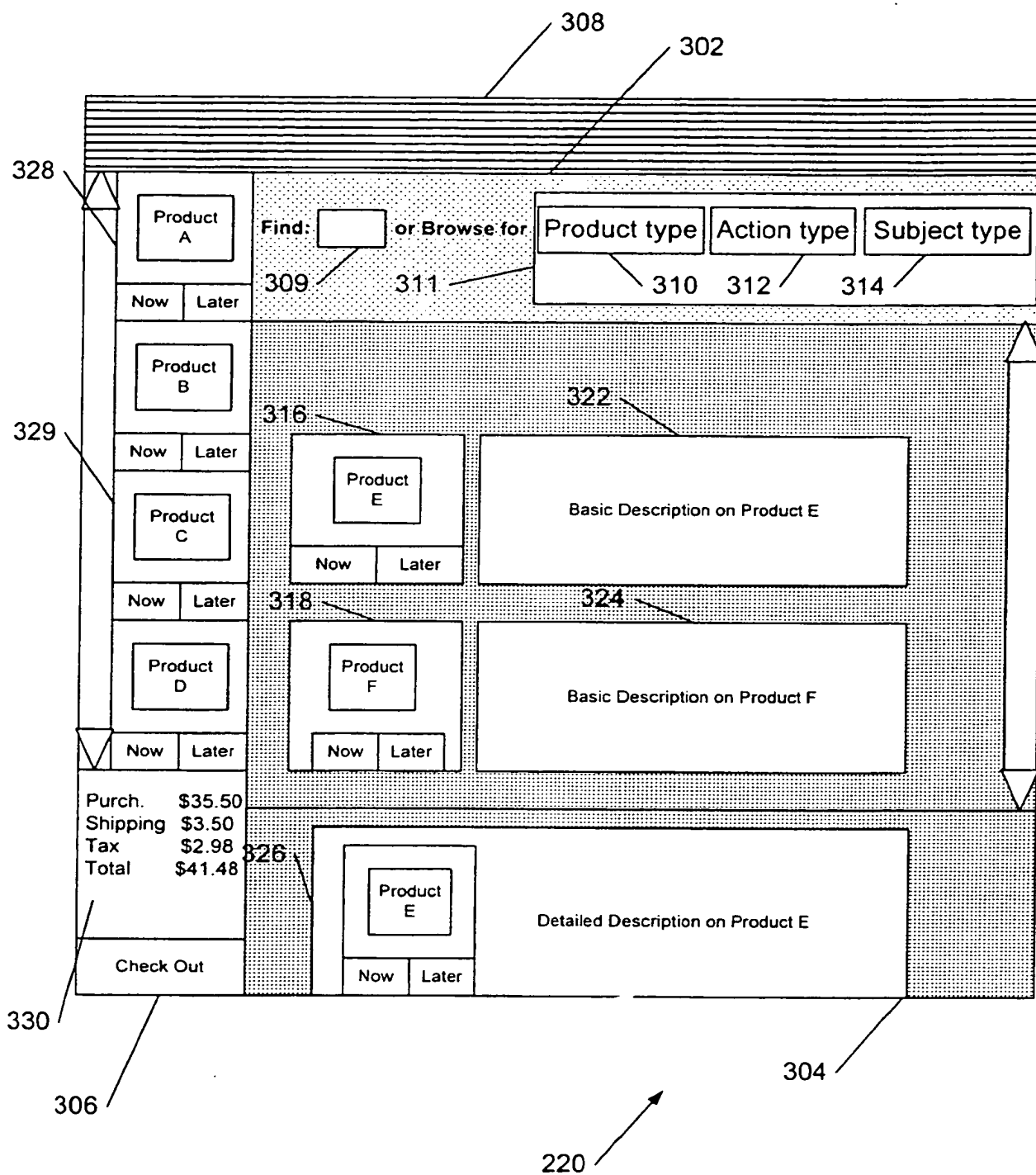   displaying the matching products and services for purchase.
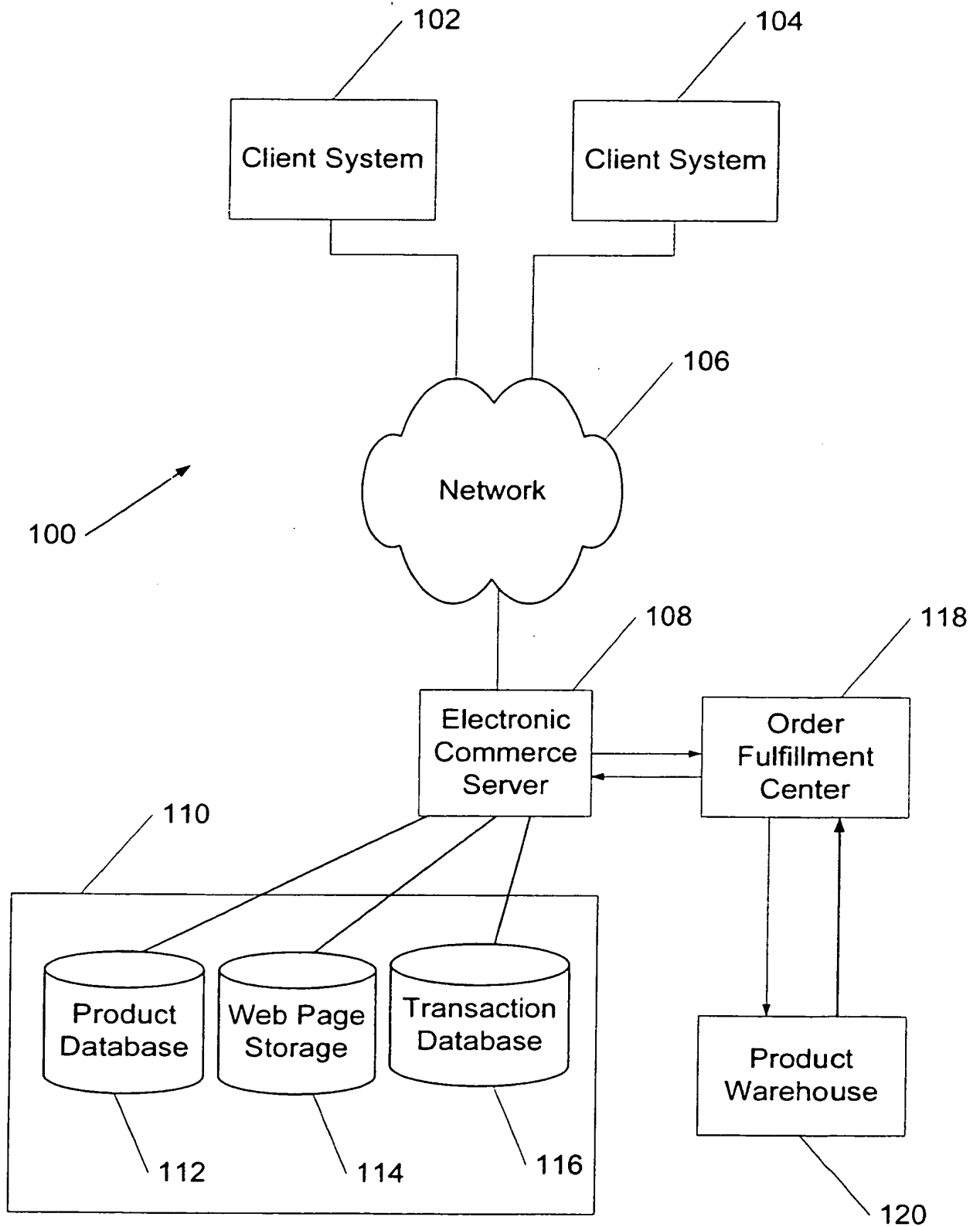
FIG. 1

FIG. 2

FIG. 3

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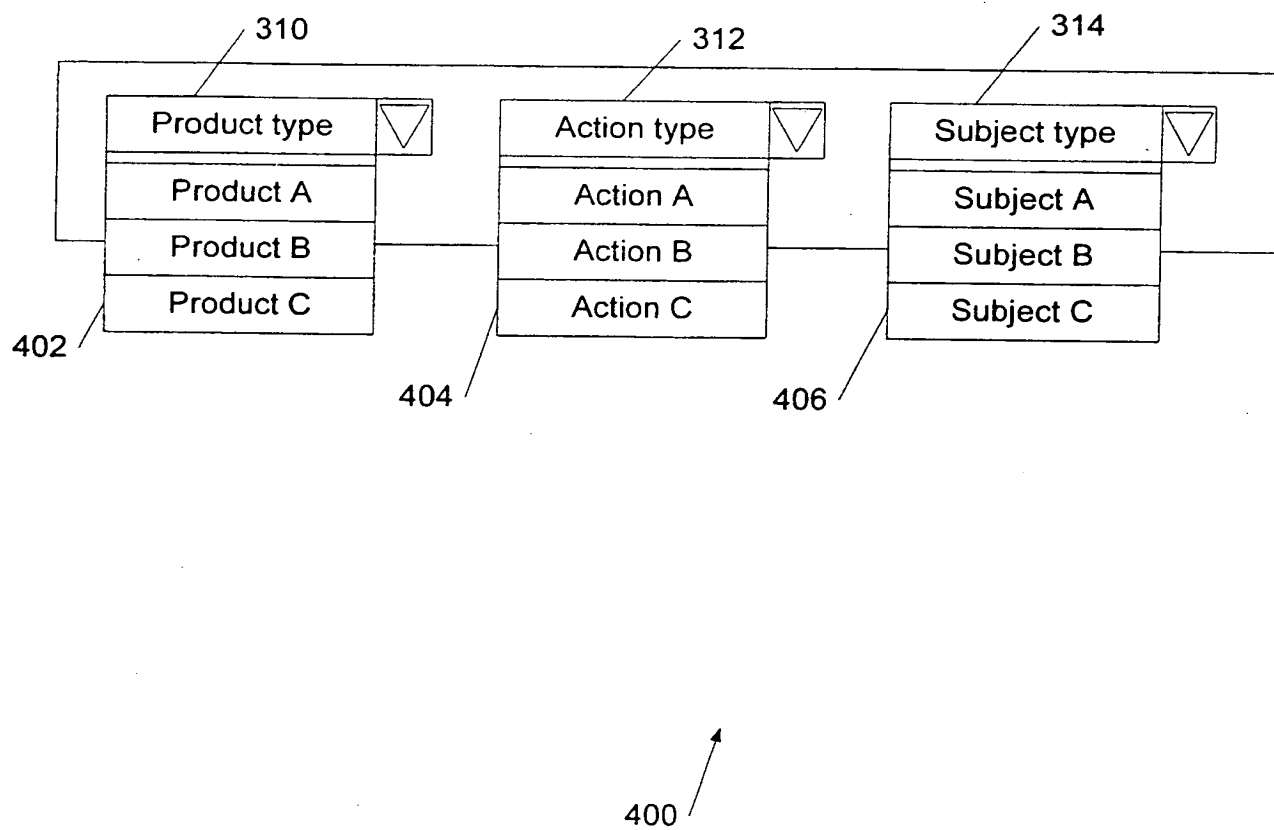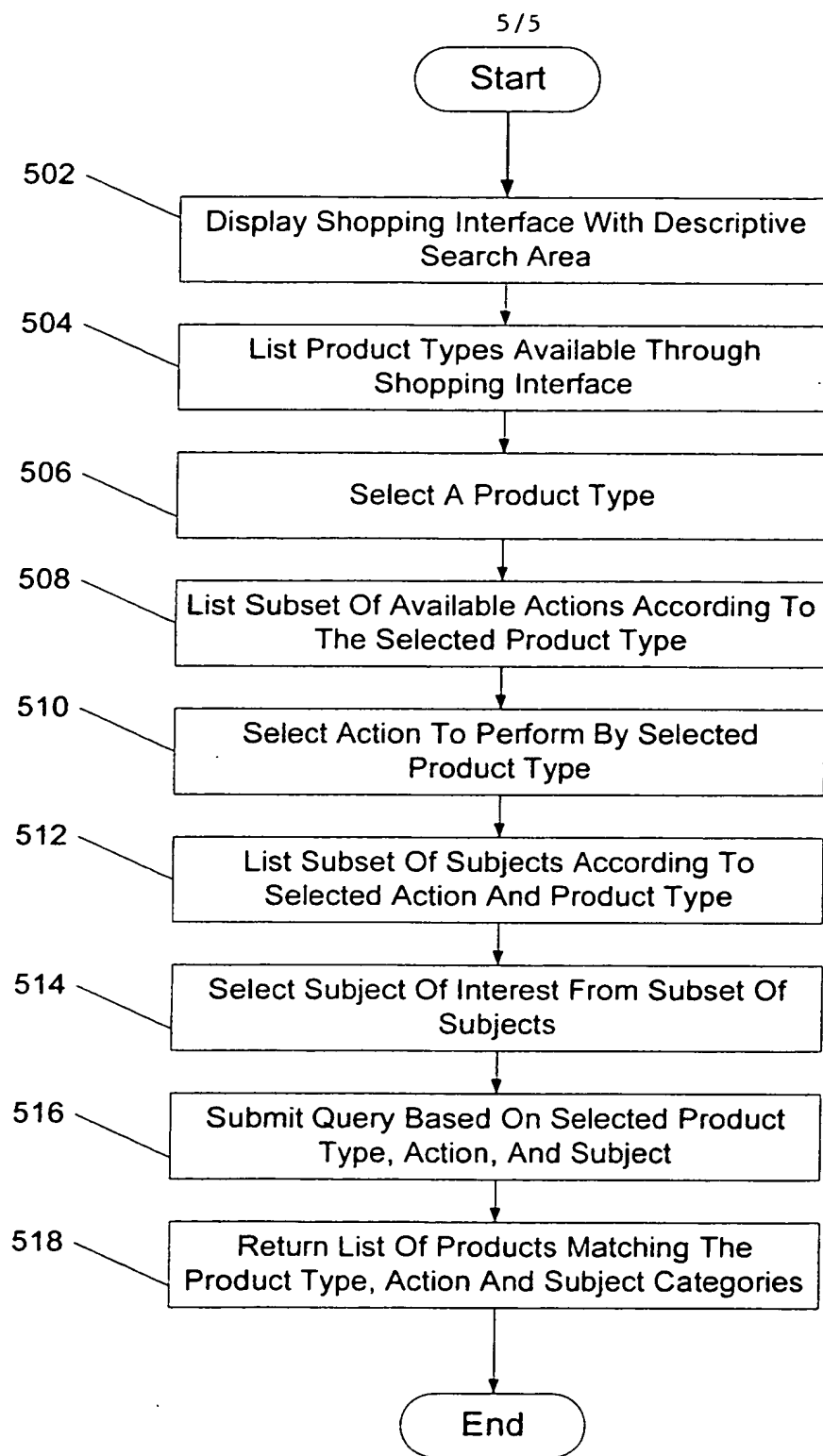

FIG. 4

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                          ┌─────────────┐
                          │    Start    │
                          └──────┬──────┘
                                 │
                                 ▼
502 ──────┐    ┌──────────────────────────────────────────┐
          │    │ Display Shopping Interface With Descriptive │
          └────│              Search Area                    │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
504 ──────┐    ┌──────────────────────────────────────────┐
          │    │    List Product Types Available Through    │
          └────│            Shopping Interface              │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
506 ──────┐    ┌──────────────────────────────────────────┐
          │    │            Select A Product Type           │
          └────│                                            │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
508 ──────┐    ┌──────────────────────────────────────────┐
          │    │ List Subset Of Available Actions According To │
          └────│          The Selected Product Type         │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
510 ──────┐    ┌──────────────────────────────────────────┐
          │    │     Select Action To Perform By Selected   │
          └────│                Product Type                │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
512 ──────┐    ┌──────────────────────────────────────────┐
          │    │     List Subset Of Subjects According To   │
          └────│      Selected Action And Product Type      │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
514 ──────┐    ┌──────────────────────────────────────────┐
          │    │    Select Subject Of Interest From Subset Of │
          └────│                 Subjects                   │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
516 ──────┐    ┌──────────────────────────────────────────┐
          │    │     Submit Query Based On Selected Product │
          └────│          Type, Action, And Subject         │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
518 ──────┐    ┌──────────────────────────────────────────┐
          │    │       Return List Of Products Matching The  │
          └────│ Product Type, Action And Subject Categories │
               └────────────────────┬─────────────────────┘
                                    │
                                    ▼
                          ┌─────────────┐
                          │     End     │
                          └─────────────┘
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FIG. 5

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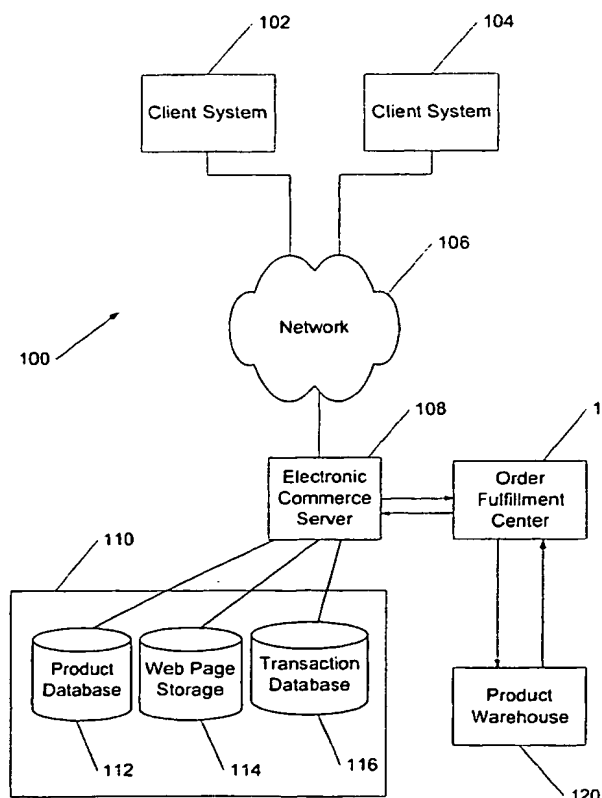
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Published:
— with international search report

[Continued on next page]

(54) Title: DESCRIPTIVE SEARCH METHOD AND APPARATUS FOR USE IN ELECTRONIC COMMERCE

(57) Abstract: A method and apparatus are provided to search for products and service for sale in electronic commerce. In a shopping interface for electronic commerce, a descriptive graphical user interface (GUI) search component establishes a communication session between a client computer system having a display device and an electronic commerce server computer over a network; generates a view on the display device having an area to search for products and services for purchase; displays a field listing products available for purchase; receives a selection from one of the listed products; displays a field listing actions associated with the selected product; receives a selection from one of the listed actions; displays a filed listing subjects associated with the selected product and the selected action; selects a subject from one of the listed subjects; searches a database associated with the electronic commerce server for products and services matching the selected product, action, and subject combination, and displays the matching products and services for purchase.

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

Int   nal Application No

PCT/US 00/17031

A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 12238 A (DANISH INTERNATIONAL INC) 25 April 1996 (1996-04-25) page 1, line 34 -page 6, line 2 abstract page 9, line 24 -page 15, line 11 page 33, line 17 -page 35, line 5 figures 1-10,21-25 claims	1
X	WO 88 02147 A (COCHRAN NANCY P) 24 March 1988 (1988-03-24) abstract page 4, line 14 -page 8, line 5 claims	1
A	US 5 842 203 A (D ELENA DANIEL F ET AL) 24 November 1998 (1998-11-24) the whole document	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 July 2003	22/07/2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340-2040, Tx. 31 651 epo nl, Fax (+31–70) 340-3016	Abbing, R

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

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